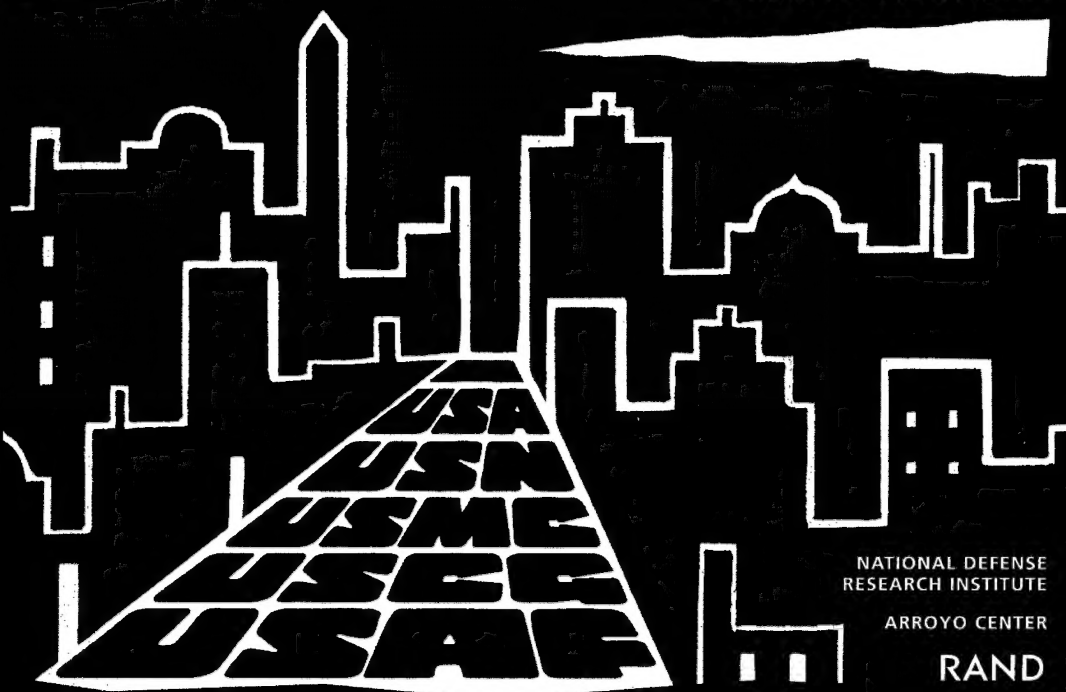


# "...WE BAND OF BROTHERS"

The Call for Joint Urban  
Operations Doctrine

**DISTRIBUTION STATEMENT A**  
Approved for Public Release  
Distribution Unlimited

Russell W. Glenn



NATIONAL DEFENSE  
RESEARCH INSTITUTE

ARROYO CENTER

RAND

The research described in this report was sponsored by the Joint Staff and the United States Army. It was conducted in RAND's National Defense Research Institute, a federally funded research and development center supported by the Office of the Secretary of Defense, the Joint Staff, the unified commands, and the defense agencies, Contract No. MDA903-95-C-0059, and in RAND Arroyo Center, a federally funded research and development center sponsored by the United States Army, Contract No. DASW01-96-C-0004.

ISBN: 0-8330-2732-8

The RAND documented briefing series is a mechanism for timely, easy-to-read reporting of research that has been briefed to the client and possibly to other audiences. Although documented briefings have been formally reviewed, they are not expected to be comprehensive or definitive. In many cases, they represent interim work.

RAND is a nonprofit institution that helps improve policy and decisionmaking through research and analysis. RAND® is a registered trademark. RAND's publications do not necessarily reflect the opinions or policies of its research sponsors.

© Copyright 1999 RAND

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from RAND.

*Cover artwork concept by Priscilla B. Glenn*

Published 1999 by RAND

1700 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138

1333 H St., N.W., Washington, D.C. 20005-4707

RAND URL: <http://www.rand.org/>

To order RAND documents or to obtain additional information,  
contact Distribution Services: Telephone: (310) 451-7002;

Fax: (310) 451-6915; Internet: [order@rand.org](mailto:order@rand.org)

# **"...WE BAND OF BROTHERS"**

**The Call for Joint Urban Operations Doctrine**

**Russell W. Glenn**

**DOCUMENTED BRIEFING**

*DB-270-JS/A*

**19990609 049**

Prepared for the Joint Staff and the United States Army

**NATIONAL DEFENSE RESEARCH INSTITUTE / ARROYO CENTER**

**RAND**

Approved for public release; distribution unlimited

**DTIC QUALITY INSPECTED 4**

For more information on the RAND Arroyo Center, contact the Director of Operations, (310) 393-0411, extension 6500, or visit the Arroyo Center's Web site at <http://www.rand.org/organization/ard/>

---

## PREFACE

---

The pace of ongoing efforts to redress the U.S. armed forces' lack of readiness to conduct operations in urban areas was demonstrated in microcosm over the four months during which this document was in development. When work began in the summer of 1998, persons who recognized the nearly complete lack of joint Military Operations on Urbanized Terrain (MOUT) doctrine were notable as members of a fairly exclusive group. Aside from the occasional offhand mention of MOUT and their inherent difficulties, joint publication coverage of the topic was (and remains) nonexistent. This condition existed despite the inherently joint character of military operations in built-up areas, as demonstrated by recent missions in Lebanon, Panama, Khafji, Haiti, Liberia, Sierra Leone, and those ongoing in Bosnia-Herzegovina.

Recognizing that the topic would soon emerge as one of notable concern, the J8 Urban Working Group asked the RAND Arroyo Center urban operations team to investigate whether there was a need for joint MOUT doctrine at the operational level of war. Initial work determined that there was a need for joint doctrine at not only the operational but also the tactical level of war. Team analysis continued with the objective of determining specific requirements that such doctrine should include.

During RAND's initial weeks of investigation, the amount of attention given to joint urban operations, and the number of interested parties outside of RAND, expanded dramatically. By September 1998 a separate MOUT joint publication was under consideration; in early October all services agreed on the need for joint doctrine. The only

continuing debate concerned whether such doctrine should be introduced in future revisions of existing publications or presented in a separate manual on the subject. By mid-October the 22nd Joint Doctrine Working Party had voted to develop a separate joint MOUT publication.

This report reviews the calls for joint doctrine, analyzes the roles such doctrine should play, and identifies the specific needs a separate joint publication must address if it is to meet the demands of future operations. Research in conjunction with this report was conducted in the International Security and Defense Policy Center, part of RAND's National Defense Research Institute (NDRI), and in the Force Development and Technology Program, part of RAND Arroyo Center. NDRI and the Arroyo Center are both federally funded research and development centers, the first sponsored by the Office of the Secretary of Defense, the Joint Staff, the unified commands, and the defense agencies, and the second by the United States Army. The report will be of interest to governmental and commercial-sector personnel whose responsibilities include doctrine, policy design, funding, planning, preparation, or the development of technologies in support of operations, civil or military, in urban environments.

---

## CONTENTS

---

|   |      |
|---|------|
| Preface .....                                 | iii  |
| Contents .....                                | v    |
| Summary .....                                 | vii  |
| Acknowledgments .....                         | xiii |
| Abbreviations .....                           | xv   |
| 1. INTRODUCTION .....                         | 1    |
| 2. THE CALL FOR JOINT MOUT DOCTRINE .....     | 5    |
| 3. THE ROLES OF JOINT MOUT DOCTRINE .....     | 11   |
| 4. WHAT SPECIFIC DOCTRINAL NEEDS EXIST? ..... | 19   |
| 5. CONCLUSION .....                           | 53   |
| References .....                              | 59   |

---

## SUMMARY

---

### BACKGROUND

Growing interest in military operations on urbanized terrain (MOUT) has spawned a review of U.S. force readiness to conduct missions during such undertakings. Units have too frequently been found to be less able during MOUT training than is desirable. The resultant identification of shortcomings, in turn, has revealed areas requiring improvement. The causes for this condition are multifold, but diagnoses readily point to inadequate training and doctrine as fundamental weaknesses. As training in considerable part takes its lead from doctrine, a thorough review of U.S. service and joint doctrine is in order.

This report is an element of that review. As it was readily apparent that there was little in the way of joint MOUT doctrine, the J8 Urban Working Group (UWG) requested that RAND determine whether such doctrine was necessary at the operational level of war. Initial work and interviews revealed that the question as asked circumscribed the issue too narrowly. Analysis was therefore expanded in the following ways:

- Rather than limit consideration of joint doctrinal concerns to the operational level, the study was expanded to encompass tactical issues.
- Instead of simply answering the question as to whether a joint doctrine was called for, RAND sought to specifically identify requirements that should be a part of any joint MOUT doctrine.



- If joint MOUT doctrine was found to be necessary, should the resulting guidance be added to future revisions of current joint manuals, or was a new, separate joint publication dealing exclusively with MOUT called for?

## ANALYTICAL APPROACH

Research proceeded in three primary steps, the first being a determination of the character and level of concern of the calls for joint MOUT doctrine. Reviews of historical and recent literature and the first few of many interviews confirmed that joint MOUT doctrine was virtually nonexistent, that there was a need for it, and that the need was not limited to the operational level of war. The fundamental question, whether joint doctrine is needed, was thus answered early in the process. However, the particulars of the form such doctrine should take, the roles it would play, and the specific doctrinal requirements it would address were less obvious.

Early analysis also indicated that it is potentially dangerous to focus too greatly on MOUT to the exclusion of activities elsewhere in an operational area. MOUT are generally but a component of a larger operation or campaign; rarely do they encompass the entirety of a nation's or coalition's attentions. Joint MOUT doctrine must therefore assist commanders in their efforts to determine how actions in built-up areas are to complement others in achieving strategic objectives. Doctrine should help commanders and staffs determine how much of their limited resources should be dedicated to the urban portion of their overall undertaking (an important consideration given the historically high consumption rates associated with operations in cities).

World demographic trends reflect an increasing concentration of populations and key functions in urban areas, but this well-known tendency is only one reason to expect that U.S. forces will be increasingly drawn into these population nodes. United States armed forces have significant asymmetric advantages over virtually any potential foe in open combat. Actions in 1973 Suez City, 1993 Mogadishu, and 1995 Grozny demonstrated weaker adversaries' use of MOUT to even the odds. Leaders hostile to American intentions are likely to similarly seek the advantages associated with urban environments in the future.

The second step in the research agenda was elucidation of joint MOUT doctrine's roles in the service of U.S. armed forces operations. Interestingly, no joint definition for MOUT exists, though given the agreement of the Army and Marines in this regard, the absence posed no notable hurdle to this analysis. The definition used by both services is as follows:

*Military Operations on Urbanized Terrain (MOUT):* "All military actions planned and conducted on a topographical complex and its adjacent natural terrain where man-made construction is the dominant feature. It includes combat-in-cities, which is that portion of MOUT involving house-to-house and street-by-street fighting in towns and cities." (MCWP 3-35.3 and FM 101-5-1)

This definition is fundamental to establishing the roles of joint MOUT doctrine. Of special note:

- MOUT are not limited to combat actions, but instead encompass the full spectrum of military activities, including stability and support missions.
- The definition is not limited to the tactical level of war; it includes the strategic, operational, and tactical levels.
- Operations in U.S. domestic built-up areas fall under the auspices of MOUT
- MOUT are not limited exclusively to activities within a built-up area.

MOUT doctrine, then, must include urban operations such as those in 1997 Haiti and Bosnia-Herzegovina as well as the better-known Chechen, Somali, and Stalingrad examples. Homeland defense and domestic riots involving reserve or active forces likewise should find coverage in a joint MOUT manual. Further, to fully serve users, such guidance must reflect a cognizance of conditions as they will likely be found during coming operations, e.g., restrictive rules of engagement stemming from noncombatant casualty and infrastructure damage concerns, and the vastness of modern urban conglomerations.

The third and final analytical step was a compilation of specific requirements that literature reviews or field experience dictated should be part of a U.S. joint MOUT doctrine. Primary research findings are grouped into several functional areas for ease of presentation and subsequent use:

- Nature of urban areas
- Intelligence
- Command and control
- Information operations
- Noncombatant considerations
- Fire power and fire support
- Logistics
- Weapons of mass destruction
- Engineer support
- Training

Identification of specific requirements within each category is described as having either tactical- or operational-level relevance, or both.

## CONCLUSION

Our findings are important to any effort to develop a joint MOUT doctrine. First, the number of requirements that apply to either or both the tactical and operational levels is such that a doctrinal effort will have to encompass both if it is to have any hope of fully addressing the needs of men and women in the field. Second, the scope and number of requirements sustains calls for immediate action in the creation of joint urban operations doctrine; the absence of such doctrine does not bode well for U.S. armed services performance in the intervening months. Third, both this need for immediacy and the quantity of issues requiring coverage support creation of a new joint manual rather than distributing MOUT concerns throughout many pertinent and extant joint publications (JPs). While the subject should also receive coverage during future revisions of these JPs, commanders and planners in organizations preparing for and exe-

cutting urban operations deserve a single source to which they can turn.

There is unquestionably a need for joint MOUT doctrine; it is needed as soon as is feasible. This requirement has been recognized; the joint staff is taking action to address it. Ongoing J8 Urban Working Group initiatives include creation of a MOUT handbook to serve as an interim guide pending completion of a JP. Less recognized is the nature of the material such documents should cover. This publication assists in determining these requirements.

---

## ACKNOWLEDGMENTS

---

The author thanks the many who provided their time and insights during the interviews on which much of the following material is based. Three men in particular acted as hosts during trips crucial to serving the needs of our armed serves and deserve special recognition: LTC Tom Greco (Bosnia), MAJ Jeff Lau (Germany), and LTC Dave Maxwell (Korea).

A special thanks to Mary Aguilar, my secretary, and Patrice Lester, documents specialist, whose efforts made this offering possible. A heretofore unrecognized and gifted group of editors and artists who have been integral in the creation of several of our urban operations series publications were again key in this report's development: Nikki Shacklett, Paul Murphy, Ron Miller, and Pete Soriano. RAND's librarians have consistently gone where few have researched before to fulfill unusual requests from the author; he thanks that entire group of professionals and would like to recognize Joann Davis, Roberta Shanman, Rebecca Andrade, Patrice Lattimore, Jamison Jo Studebaker, Rick Bancroft, Leroy Reyes, Barbara Neff, Gloria Dickey, and Kompheak Taing in particular.

LTC Duane Schattle, USMC, was essential to the project's initiation and the role it played in bringing a joint urban operations manual (JP 3-06, *Doctrine for Joint Urban Operations*) to the U.S. armed services. The professional unselfishness and thriftiness of RAND's Bruce Bennett made funding for the project possible. I once again must also thank two men whose expertise and professionalism as reviewers have made the final product a better offering to its readers: RAND's Bob Howe and LTG Ron Christmas, USMC (ret.). A sincere thanks

also goes to Art Durante at the U.S. Army Infantry School for his most valuable insights. Donna Betancourt, the RAND Arroyo Center Director of Operations, was, as always, critical in ensuring our sponsors are as well served as is possible.

The title quotation "...we band of brothers" is taken from William Shakespeare's *Henry V*, Act IV, Scene iii.

The following kindly granted permission to use their images in this report:

Page 1: Zoltan Aranyi, University Librarian, JATE University Library, SZEGED, Hungary. Image available on the World Wide Web at <http://www.bibl.uszeged.hu/bild/mil/ww2.map/sztalingrad.html>.

Pages 5, 11, 19, and 53: U.S. Department of Defense DefenseLink. Image available on the World Wide Web at <http://www.defenselink.mil/photos/Jun1996/960626-N-00000-002.html>.

Page 6: Dennis Parks, Museum of Flight, Seattle, Washington. Image available on the World Wide Web at <http://www.museumofflight.org/military.htm>.

Page 22: Dr. Peter Bialas, President KETIC Inc. Image available on the World Wide Web at <http://www.value.co.kr/Pictures/Pict0002.htm>.

---

## ABBREVIATIONS

---

|        |   |
|--------|---|
| AC-130 | United States Air Force fixed-wing aircraft, a primary mission of which is to provide highly accurate fires in support of ground operations |
| AD     | Armored Division  |
| AFB    | Air Force Base  |
| AR     | Armor   |
| BOS    | Battlefield Operating Systems   |
| CA     | Civil Affairs   |
| CEP    | Circular Error Probable   |
| CINC   | Commander-in-Chief  |
| COL    | Colonel   |
| CPT    | Captain   |
| CS     | o-chlorobenzalmalononitrile, a riot control agent   |
| CW2    | Chief Warrant Officer Two   |
| FASCAM | Family of Scatterable Mines   |
| FM     | Field Manual  |
| GEN    | General   |
| GPS    | Global Positioning System   |
| G2     | Army or Marine Corps component intelligence staff officer   |

|         |   |
|---------|---|
| G3      | Army or Marine Corps component operations staff officer                         |
| HHC     | Headquarters and Headquarters Company   |
| HQ      | Headquarters  |
| HUMINT  | Human Intelligence  |
| IFF     | Identification, Friend or Foe   |
| IO      | Information Operations  |
| ID      | Infantry Division   |
| IPB     | Intelligence Preparation of the Battlefield                                     |
| JP      | Joint Publication   |
| LOS     | Line-of-Sight   |
| LZ      | Landing Zone  |
| MAJ     | Major   |
| MCWP    | Marine Corps Warfighting Publication  |
| MH-53   | A model of United States Marine Corps helicopter                                |
| MH-60L  | Special-purpose version of the United States Army Blackhawk helicopter, L model |
| MI      | Military Intelligence   |
| MOUT    | Military Operations on Urbanized Terrain  |
| NCA     | National Command Authorities  |
| NDRI    | National Defense Research Institute   |
| NGO     | Nongovernmental Organization  |
| NORDPOL | Nordic Polish   |
| PSYOPS  | Psychological Operations  |
| PVO     | Private Volunteer Organization  |
| ROE     | Rules of Engagement   |
| SF      | Special Forces  |
| SFOR    | Stabilization Force   |
| SO      | Staff Officer   |



|         |   |
|---------|---|
| SOF     | Special Operations Forces   |
| TES     | Test and Evaluation Squadron  |
| TF      | Task Force  |
| TOW     | Tube-launched, Optically tracked, Wire-guided,<br>heavy antitank missile system |
| TPFDL   | Time-phased Force and Deployment List   |
| TTP     | Tactics, Techniques, and Procedures   |
| USA     | United States Army  |
| USAF    | United States Air Force   |
| USAREUR | United States Army Europe   |
| UAV     | Unmanned Aerial Vehicle   |
| USFK    | United States Forces Korea  |
| USMC    | United States Marine Corps  |
| USN     | United States Navy  |
| UWG     | Urban Working Group   |
| WMD     | Weapons of Mass Destruction   |
| XO      | Executive Officer   |
| 1CAV    | 1st Cavalry Division  |
| 1AD     | 1st Armored Division  |
| 1ID     | 1st Infantry Division   |

---

## Chapter One

---

# INTRODUCTION

---



Today's military operations, whether in support of a nation recovering from disaster, combating a foe in support of national interests, or any one of the other myriad missions for which the country calls on its military men and women, are inherently joint. As Shakespeare's King Henry V summoned his men to rise to the challenge, so do America's leaders look to its soldiers, marines, sailors, and airmen to join together as a "band of brothers" to serve the state. To meet the

demands placed on them, the armed forces turn to joint military doctrine as they prepare for and conduct such operations. This report considers the guidance to which the services would turn during urban contingencies: joint urban operations doctrine.

This briefing summarizes analysis done in support of the J8 Urban Working Group (UWG). The research was conducted in RAND's National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the unified commands, and the defense agencies; and the RAND Arroyo Center, a federally funded research and development center sponsored by the United States Army.

## The Foundation

### The Fundamental Question:

- Does the United States military require joint MOUT doctrine?

### Underlying investigation:

- The call for joint MOUT doctrine
- The roles of joint MOUT doctrine
- What specific doctrinal needs exist?

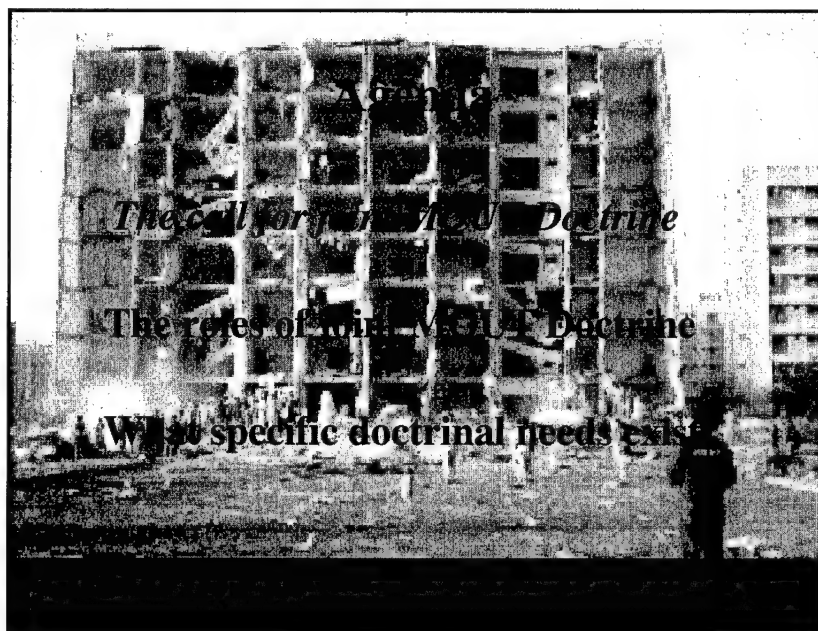
The primary question addressed herein is stated at the top of the slide. The J8 UWG requested an investigation of this issue to support its ongoing work for the Office of the Secretary of Defense.

The discussion of this primary question has three components. First, we take a macro view of current joint MOUT (military operations on urbanized terrain) requirements. Second, if such doctrine is to be developed, it is important to understand its roles in the service of U.S. armed forces readiness. Third, we identify specific tactical and operational needs, relying on historical study, reviews of recent topical literature, and a considerable number of field interviews.

---

THE CALL FOR JOINT MOUT DOCTRINE

---



The first portion of the analysis considers the nature of joint MOUT doctrine and its current status.

## *The raison d'être*

"They all must also believe that they are part of a team, a joint team, that fights together to win."

—GEN Colin Powell



"War is thus an act of force to compel our enemy to do our will."

—Clausewitz, *On War*

"That's where all the people are."

—MAJ Jeffrey Lau, XO, TF 1-77 AR

RAND

Fundamentally, MOUT are joint because executing them, as is the case with operations supporting virtually any modern U.S. military mission, demands the participation of multiple armed services. Urban settings are becoming more critical as cities continue to grow in importance as political, diplomatic, economic, social, cultural, and, often, military nodes. War (and, it might be said, conflict in a more general sense) involves the imposition of a force's will on one or more subjects. With increasing world urbanization, efforts to impose will naturally find themselves ever more commonly focused on built-up areas.

## **The Lessons of History I**

**On the one hand, we controlled the cities in Vietnam yet did not control the country.**

**On the other, controlling Vietnam's countryside but not its cities would likely have been equally ineffective.**

**In Panama, Somalia, Haiti, and Bosnia, control of urban areas was/is an essential component of mission success.**

**It is apparent that control of urban areas will be critical to many of the U.S. military's future actions in the service of national objectives.**

It is immediately evident that control of urban areas itself may be insufficient to ensure operational success. In Vietnam, U.S. and Republic of South Vietnam forces controlled virtually every major city and town in the nation yet failed to dominate an enemy who retained influence in villages and the countryside. However, it is difficult to conceive of the reverse situation providing any greater assurance of success. Recent history furnishes multiple examples that demonstrate the extensive influence of cities on many undertakings in support of national and coalition objectives.

## **The Inevitability of Future MOUT**

Several factors make MOUT inevitable for the U.S. military. Among them:

- U.S. military capabilities have caused adversaries to seek ways of neutralizing American asymmetric advantages
  - The foremost such advantage is U.S. air power
  - An effective, proven way to minimize the effects of military dominance is to take a conflict into cities (PLO in 1982 Lebanon; Somalis in 1993 Mogadishu; Chechens in 1995 Grozny)
- As servants of the most militarily capable nation in the world, America's servicemen and women will experience MOUT again . . . repeatedly

Although many view an adversary's effort to draw U.S. forces into built-up areas as an attempt to obtain an asymmetric advantage, it is actually the reverse that is true. U.S. air power, superior standoff ranges, and other capabilities have caused, and likely will keep causing, adversaries to take steps to deny the United States the maximum advantages that can be derived from its systems. Urban environments act to "level the playing field"; they tend to make confrontations more symmetrical. The engagements are often rifleman against rifleman at very short ranges and under conditions in which either side's soldiers or marines are equally likely to be surprised during a sudden encounter with the enemy. History provides several recent examples in which a less technologically capable force has sought to use urban battlegrounds to achieve a semblance of parity.



## Current MOUT Doctrinal Manuals

[illegible]

Considerable discussion, adequate or nearly adequate

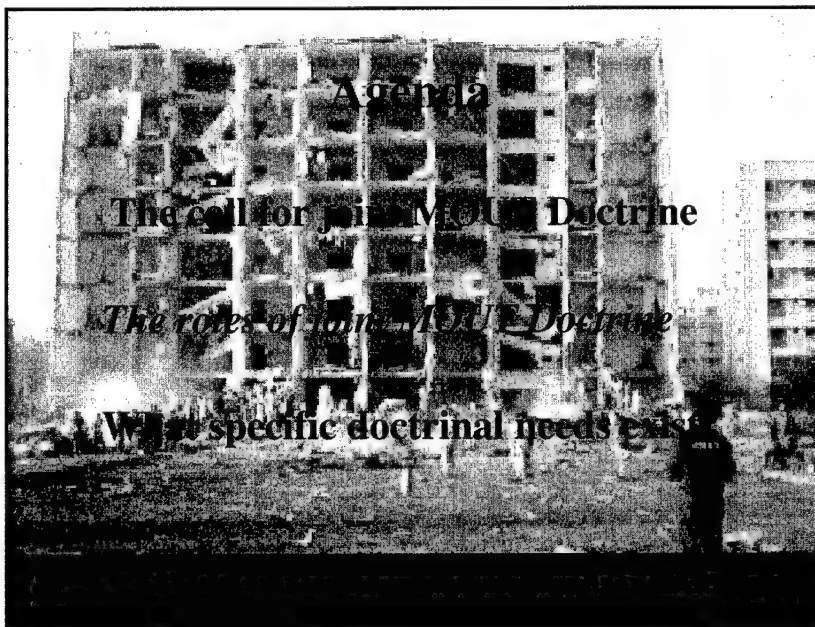
= Considerable discussion, adequate or nearly adequate

Service MOUT doctrine has improved in the 1990s, but the enhancements have come too slowly and perpetuate many longstanding shortcomings. The Army's Field Manual (FM) 90-10-1, *An Infantryman's Guide to Combat in Built-up Areas*, advanced beyond the outdated 1979 edition of FM 90-10, *Military Operations on Urbanized Terrain (MOUT)*, with the introduction of two new concepts: surgical and precision MOUT. It served its designated purpose well (providing guidance to infantry soldiers on urban tactics, techniques, and procedures), but some looked to it as the Army's primary source on MOUT in the absence of a timely update to FM 90-10. That it provided needed innovations was commendable, but it could not meet service and joint community requirements for which it was not designed. Marine Corps Warfighting Publication 3-35.3, published in April 1998, was another step forward. The U.S. Army is now in the process of rewriting its primary urban operations doctrinal manual, FM 90-10.

---

## THE ROLES OF JOINT MOUT DOCTRINE

---



Having considered the factors supporting a call for joint MOUT doctrine, it follows that understanding the roles this doctrine would assume is critical to determining whether there is a need for such guidance.

## What Is Joint MOUT Doctrine?

- Joint doctrine: "Fundamental principles that guide the employment of forces of two or more services in coordinated action toward a common objective."  
(JCS Pub 1-02)
- Military Operations on Urbanized Terrain: "All military actions planned and conducted on a topographical complex and its adjacent natural terrain where man-made construction is the dominant feature. It includes combat-in-cities, which is that portion of MOUT involving house-to-house and street-by-street fighting in towns and cities."  
(MCWP 3-35.3 and FM 101-5-1)

Fundamental to understanding any roles joint MOUT doctrine might assume are the definitions of "joint doctrine" and "military operations on urbanized terrain." Joint doctrine provides guidance for operations involving two or more services. Since U.S. MOUT operations will most likely include both ground (Army and Marine) and air (USAF, USMC, USN, and USA) forces during virtually any contingency, the need for joint guidance is a given. Accordingly, a joint definition of MOUT (or a replacement term) is essential to developing urban operations joint doctrine. Some significant implications of this definition are considered on the following page.

### **Therefore MOUT (and thus MOUT Doctrine) Includes...**

- The full spectrum of military operations (i.e., not simply combat-related activities)
- Actions at all three levels of war
- Both international and domestic missions
- Tasks within built-up areas and those in support of such tasks

MOUT includes the complete spectrum of potential U.S. military activities. Combat, stability, and support missions are all a part of MOUT should they take place within a built-up area or its immediate environs. Similarly, urban operations include activities at all three levels of war (or, perhaps more accurately, levels of operations given that missions often do not involve combat) and can encompass domestic as well as international taskings, areas that we have identified as receiving insufficient attention in current doctrinal publications.

## The Lessons of History II

Military operations are but one means of influencing the will of an enemy or noncombatants. Economic, political, media, and other means may be equal or greater in effectiveness. The effects gained from the application of these means are often magnified in urban areas.

Therefore, MOUT may well be but a single component of a more broadly based campaign; the application of military means alone may be insufficient to meet national or coalition objectives.

*An essential responsibility of joint doctrine is to determine the role and limitations of MOUT in campaign planning.*

The nature of urban areas and their role as economic, political, social, and other nodes mean that the conduct of military operations alone may be insufficient for the achievement of national objectives. Commanders and military planners have to integrate and coordinate their activities with those of other organizations that are addressing needs beyond the capabilities of armed forces. Joint doctrine has to provide guidance on the appropriate role of the military in such situations. It should also assist in the determination of when military force alone is insufficient; i.e., during what contingencies or under what conditions should military leaders inform civilian leadership that armed forces by themselves cannot meet National Command Authorities' expectations?

## Future MOUT Will Be:

- Constrained by strategic requirements to minimize friendly (to include coalition) casualties, noncombatant loss of life, and collateral damage
- But one component of national or coalition undertakings in urban areas
- Part of a larger military operation or campaign inclusive of pre-hostility, combat, and post-hostility responsibilities
- Potentially overwhelming due to the size of today's megalopolises
- Joint, both inside and outside the built-up areas

Future urban military contingencies are likely to include significant constraints on military operations, some explicitly stated and others only implied. Commanders will understand that too great a loss of American, coalition service member, or noncombatant life will jeopardize mission success. Likewise, extensive damage to infrastructure may make rebuilding financially overwhelming for a friendly host nation, a defeated enemy, or even international aid sources.

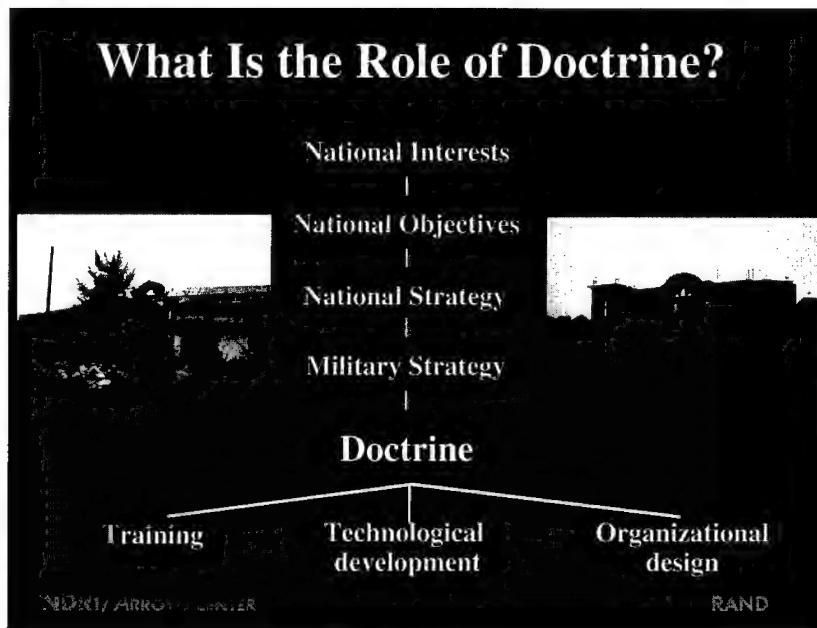
Military operations themselves will very likely include extensive activities other than those in built-up areas. Joint doctrine needs to help in determining what role urban areas have in campaign plans and the extent to which commanders should dedicate assets to an environment historically proven to consume resources at seemingly extravagant rates.

MOUT will include actions before, during, and after combat (should combat be a part of operations). Providing resources for, coordinating, and developing Time-phased Force and Deployment Lists

(TPFDLs) to best meet the needs of operational phases during MOUT-intense missions must currently be done with no help from joint doctrine.

Further, the nature of MOUT has changed dramatically in the past half century. History offers us valuable lessons as we undertake future operations in cities, but approaches will have to change in many instances. In 1950, U.S. and South Korean forces recaptured Seoul. At the time, the total end strength of the U.S. Army was approximately equal to the population of that city: 1,000,000 persons. Today the Army's strength is roughly half that number, while metropolitan Seoul has an estimated 13 million inhabitants. The increase in the number of city occupants reflects similar enlargements of the numbers of buildings, streets, vehicles, and other elements that complicate military operations regardless of the mission assigned.

Finally, as has been mentioned, U.S. MOUT has been and will continue to be a joint undertaking. The services (including the Coast Guard, given the MOUT implications for homeland defense and other missions in which that service will likely play a significant role) must have common guidance to assist in the development of both single- and multiple-service training. They must "speak the same language" when considering operations in built-up areas so as to avoid confusion or unnecessary operational delays. Similarly, they must understand their responsibilities during MOUT in order to develop service doctrine, weapon systems, procedures, and other capabilities essential to success during actions in cities around the world.



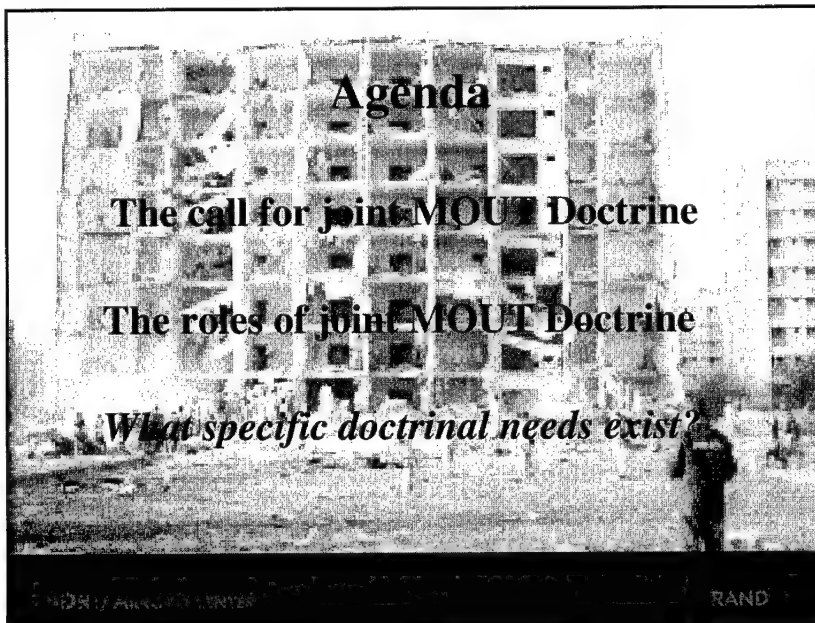
A somewhat oversimplified portrayal of relationships helps to explain the critical role of doctrine for the armed forces. Doctrine serves national interests. It does so not only by providing guidance on how to conduct operational activities, itself an extremely important function, but also by acting to guide technological development, the design and conduct of training, and the design of organizations. (Technological development and organizational structure can, in turn, influence doctrine.) Without doctrine to provide a beacon, these activities can occur in haphazard, inefficient, uncoordinated, and possibly ineffective ways. Training in particular relies on doctrine for uniform standards and consistency of method in the organizations for which the doctrine was written. Lacking this guidance, CINCs will receive units that have incompatible approaches to MOUT. The result will be either loss of time as organizations train together in preparation for coming missions, or ineffectiveness and unnecessary loss of life during operations for which there has been no training time.



---

**WHAT SPECIFIC DOCTRINAL NEEDS EXIST?**

---



It has been established that current conditions support the development of joint MOU doctrine; we have also delineated the roles of such doctrine. What remains is to look to history, calls from the field, and other pertinent sources to establish:

1. whether there is sufficient demand for the development of such doctrine, and

2. whether any such demand is extensive enough to support creation of a separate joint publication on urban operations in lieu of inserting pertinent MOUT-related matters in existing JPs.

## Joint MOUT Doctrine: A Sample of Research Sources

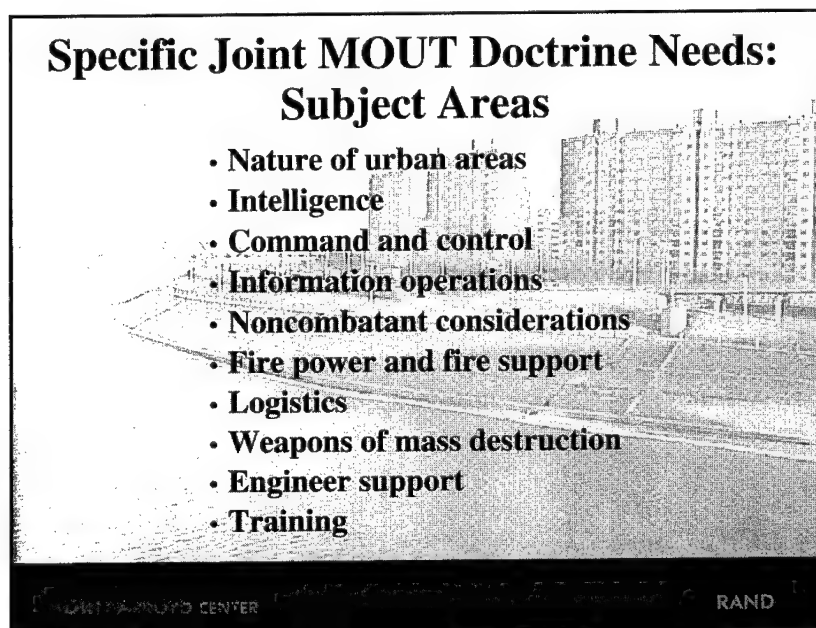
### • Interviews:

- Bosnia (Brigade Commander, IAD G2, IAD and ICAV Strategic Planners, SF Company Commander, NORDPOL G3 Planner, others)
- Germany (IHD Task Force XO for unit with Breko in sector, IHD G2 Plans Officer)
- Seoul (CINC Strategic Planner, USFK G2 Plans Officer, USFK G3 Plans Officer)
- USAF 422 TES (Project Officer)
- USMC Test & Evaluation Officer, Yuma, AZ

### • Books, Articles, Other Printed Sources:

- Antony Beevor, *Stalingrad: The Fateful Siege, 1942-43*
- Vasili Chuikov, *The Battle for Stalingrad*
- *The Dayton Peace Accords*
- Richard Holbrooke, *To End a War*
- Lewis MacKenzie, *Peacekeeper: The Road to Sarajevo*
- James D. Delk, *Fires & Furies: The LA Riots*

In its efforts to answer these questions, RAND conducted an extensive series of interviews with members of the military services, technical experts, policymakers, and others with responsibilities relevant to the issues under consideration. In addition, we used both historical and recently written sources to identify demonstrated or hypothetical needs of concern in readying U.S. servicemen and women for future urban operations. The list above offers a sampling of people interviewed and materials consulted in identifying the many joint MOUT needs noted on the following slides. Additional sources are presented in this document's bibliography.



### Specific Joint MOUT Doctrine Needs: Subject Areas

- Nature of urban areas
- Intelligence
- Command and control
- Information operations
- Noncombatant considerations
- Fire power and fire support
- Logistics
- Weapons of mass destruction
- Engineer support
- Training

RAND

For ease of presentation, we present joint doctrine requirements in the categories shown. These categories do not correspond perfectly to either the core functions used in many discussions of operational- or strategic-level issues, nor do they have a one-to-one linkage to tactical listings such as those for the battlefield operating systems (BOS). There are two reasons for this seeming discontinuity. First, many of the requirements include both tactical- and operational-level considerations; presenting them in a manner exclusively associated with either would therefore be misleading. Second, some needs do not fit comfortably in previously established categories.

A considerable number of requirements appear in the next several slides. While RAND analysts are confident that they provide an excellent headwater for any consideration of writing joint MOUT doctrine, the list is not exhaustive. Those presented do provide a sense of the depth and scope of guidance now lacking in the joint arena.

### Joint MOUT Doctrine Specific Needs: Nature of Urban Areas (1 of 2)

| Requirement   | Relevance |          |
|---|-----------|----------|
|   | Opnl      | Tactical |
| • Investigation of urban areas' influence on the pace of mission changes  | X         |          |
| • Analysis of pivotal/special role of built-up areas in campaign planning, to include influence of cities as centers of regional influence, e.g., Brcko with respect to the Republika Srpska, Bosniacs, Croats, and the Posovina corridor | X         |          |
| • Cities as infrastructure hubs: governments, economy, police, military, transportation, services   | X         | X        |

MDRI/ARROYO CENTER

RAND

Requirements (needs) are listed in no particular priority. The relevance of a specific requirement is identified as pertaining to the operational level (of war or operations), the tactical level, or both, where these are defined as follows:

**Operational level of war (JP 1-02):** "The level of war at which campaigns and major operations are planned, conducted, and sustained to accomplish strategic objectives within theaters or areas of operations. Activities at this level link tactics and strategy by establishing operational objectives needed to accomplish the strategic objectives, sequencing events to achieve the operational objectives, initiating actions, and applying resources to bring about and sustain these events. These activities imply a broader dimension of time and space than do tactics; they ensure the logistic and administrative support of tactical forces, and provide the means by which tactical successes are exploited to achieve strategic objectives."

**Tactical level of war (JP 1-02):** "The level of war at which battles and engagements are planned and executed to accomplish military ob-


jectives assigned to tactical units or task forces. Activities at this level focus on the ordered arrangement and maneuver of combat elements in relation to each other and to the enemy to achieve combat objectives."

Changes in mission during active operations are to be expected. The role of urban areas as focal points for political, economic, media, and other interests potentially hastens the rate at which such changes occur as compared to other environments.

The proximity of forces, numbers of noncombatants, and other factors can also influence the pace of changes both within the confines of a specific mission and in the character of missions themselves. Planning assumptions should be checked often during MOUT; staffs must be trained to respond rapidly to altered tactical and operational conditions. Similarly, commanders and staffs at the strategic and operational levels must aggressively wargame possible contingencies; otherwise they may be surprised by unforeseen directives and suffer "mission creep."

Not infrequently, an urban area has a role that causes its influence to be felt well beyond its boundaries. It may be the focal point of a nation, a region, or the surrounding countryside. Such roles must be understood and taken into account during the development and execution of campaign plans. One simple example might involve a town that acts as the transportation node for a region. Denying access and egress to/from the urban area could interrupt the food supply of not only the city but the surrounding rural population as well. A more specific example is the city of Brcko, recognized as a critical political node in the struggle between Bosnian, Serbo-Croat, and Serb factions. Its geographic location makes it a link between (1) Bosnia and Croatia to the north and (2) Serb-held areas in northern Bosnia. The importance of the city caused the writers of the Dayton Accords—and, subsequently, U.S. military leaders responsible for oversight of the region including Brcko—to afford it special attention. It has the equivalent of an ambassador assigned to the city itself, in considerable part because of its status as a critical node in the peacekeeping process. Second Brigade, 1st Armored Division recently had Brcko in its sector and routinely dedicated 90 percent of its assets to operations in and near this urban area. The regional significance of Brcko also extends beyond its physical boundaries; it

has economic, political, and social significance as the dominant built-up area in the Posovina corridor, a geographical area in the northern reaches of Bosnia-Herzegovina.

| Joint MOUT Doctrine Specific Needs:<br>Nature of Urban Areas (2 of 2)              |           |          |
|--|-----------|----------|
| Requirement  | Relevance |          |
|  | Opnl      | Tactical |
| • Nontraditional uses for systems, e.g., Q-36 radar to locate "celebratory fire"   |           | X        |
| • System selection guidance, e.g., MH-60L vs. MH-53 vs. AC-130                     |           | X        |
|  |           |          |
| VDR/ ARROYO CENTER RAND  |           |          |

Urban operations demand at least as much creativity in approach as do operations in other environments. Doctrine should identify exemplary cases of innovative uses for military capabilities and address the need to seek nontraditional applications of resources during MOUT. One such example from Bosnia-Herzegovina was U.S. use of Q-36 radar<sup>1</sup> to determine the location of individuals who were illegally firing weapons during celebrations.

Planners and commanders also need to understand which systems best meet the demands of given MOUT situations. Specific helicopter, fixed-wing, or combinations of aircraft may have mission profiles superior to others. Similar conclusions also pertain to other systems or systems-of-systems. Planners and commanders with limited joint or other-service experience may be unaware of capabilities available to a force in a joint operation. Joint doctrine should provide a thorough analysis of system capabilities as they apply to

<sup>1</sup>Designed for tracking artillery and mortar rounds fired by an adversary, thus allowing friendly systems to pinpoint and destroy the source of firing.



urban missions. Changes to a joint publication can ensure these analyses remain current as systems enter or leave an armed service.

| Joint MOUT Doctrine Specific Needs:<br>Intelligence (1 of 2)  |           |          |
|---|-----------|----------|
| Requirement   | Relevance |          |
|   | Opnl      | Tactical |
| • <u>Comprehensive reconsideration of IPB elements:</u> infrastructure nodes, population demographics, factions, crime elements, routes, key terrain, key events, . . . | X         | X        |
| • <u>Responsive strategic- and operational-level intelligence:</u> photo-mapping, UAV, rapid information processing and dissemination                                   | X         | X        |
| • <u>Urban collection considerations:</u> increased reliance on HUMINT, impact of displaced persons, need for centralized control                                       | X         |          |

Interviews conducted in the Republic of Korea, Bosnia-Herzegovina, and Germany included repeated calls for a far more comprehensive consideration of urban factors in intelligence preparation of the battlefield (IPB) doctrine. The analytical demands inherent in planning and monitoring MOUT activities are extraordinary in their diversity and scope. Current discussions of IPB fail to more than touch on this area. Far more rigorous guidance is essential if joint planners and commanders are to be properly served. Alternatives for addressing this need include inclusion of an extensive appendix to a separate MOUT joint publication (preferred) or expanded coverage in the body and appendices of appropriate joint and service manuals.

The demands on the intelligence community increase when military operations include large urban conglomerations. Collection depends more on human intelligence (HUMINT), for example, and the diversity within city populations complicates both the process and products of collection. In addition, the extremely short distances over which significant changes in situation occur demand compression in efforts to collect, analyze, and disseminate intelligence prod-

ucts to users. Currently there is little in the way of a capability to tell a squad leader what threats might exist in the city block to which he will next move his unit. Urban area maps of appropriate scale (generally 1:12,500 or larger) are rare.

There is a need both to comprehensively consider requirements affiliated with effective MOU intelligence support and to develop doctrine, technologies, and training to meet those demands in an operational environment. One possible solution to the long-time and continuing shortage of sufficient mapping might be development and distribution of a process that allows for declassification of overhead imagery and mass production of images with appropriate map grids, legends, and other information. Modification of imagery to eliminate potentially confusing "clutter" would further serve both ground and air users. (It should be noted that A-10 pilots conducting MOU experiments at Nellis AFB, Nevada, found overhead imagery more difficult to use than maps during periods of limited visibility. Analysis of how to modify images to eliminate problems found during 422 Test and Evaluation Squadron testing would probably be valuable.)

As stated, the increased density of individuals in cities can in some ways complicate intelligence collection. The implications of greater reliance on HUMINT must be identified. For example, if financial incentives are offered in return for information, history provides examples of a single HUMINT source providing multiple collection agencies with the same information. The source is successful in his or her efforts to obtain payment several times; intelligence analysts at higher levels see the repeated inputs as validation that the information is accurate and/or reliable. Conflicts or natural disasters tend to draw rural elements to urban areas or to cause movement between urban areas, as news or rumors of relief reach locations where suffering is rife. These displaced persons can be sources of vital information, unrest, the spread of disease, or other factors that can influence operations. Analysts need to recognize these potential impacts so as to allow commanders to meet coalition and/or national objectives. They must therefore be addressed in intelligence operations planning. Additionally, means of dealing with the differences between intelligence systems in cities and elsewhere should be covered in joint doctrine discussions.

### Joint MOUT Doctrine Specific Needs: Intelligence (2 of 2)

| Requirement  | Relevance |          |
|--|-----------|----------|
|  | Opnl      | Tactical |
| • Initial identification of decisive points, centers of gravity, relative importance of urban areas, high-payoff targets | X         | X        |
| • Nontraditional collection nodes: police stations, faction clubs, market places, hospitals                              |           | X        |
| • Monitor in-progress transitions, e.g., population turnover   | X         |          |
| • Determine nonstandard operational needs, e.g., nonindigenous language requirements, less reliance on overhead imagery  | X         | X        |

NDRI/ARROYO CENTER

RAND


Many aspects of urban operations intelligence analysis are similar to those of other mission types: the need to determine enemy reserve, command post, and resource stockpile locations; identification of avenues of approach; and the like. However, cities have additional nodes that may qualify as centers of gravity or decisive points. Power-generation plants, police stations, and water-distribution facilities, for example, have an operational significance often not found in other environments. Early identification of what elements qualify for such status and subsequent determination of their location and other relevant information is essential to proper operational planning.

Similarly, the greater reliance on HUMINT demands early identification of key individuals, critical positions in hierarchies, and gathering points. These are influenced by local culture, social structure, and governmental lines of authority, among other factors. In Brcko, Bosnia-Herzegovina, for example, police stations are critical centers of power, in part because the national military's influence has been constrained by the Dayton Accords. Similarly, private clubs are used

by criminal factions for business meetings. Knowledge of which factions use given clubs supports UN efforts to maintain peace in the city.

Urban area demographics tend to change more rapidly than do those in rural areas. Displaced persons' attractions to cities have been mentioned. Temporary residents of a built-up area may leave when previously unstable homelands once again become safe. Preoperation intelligence sources can quickly become outdated; information only weeks or even days old may quickly be overcome by events. Doctrinal guidance on how to account for such turbulence is virtually nonexistent, as is discussion of how to monitor and measure the effects of such changes.

The increased reliance on HUMINT does not mean that other sources of information cannot offer valuable benefits to commanders. Imagery, signals intelligence, and other resources will still have a role, but the nature of the role may be different. Cellular phones and other commercially available communications systems play a larger part in many city contingencies. Custom-designed monitoring systems have proved essential for successful SIGINT. A sophisticated linkage of overhead imagery with sensors placed in buildings may be essential to continuously monitor targets both in combat and during stability or support missions not involving overt hostilities. Intelligence organizations must be trained and equipped to deal with these nonstandard challenges.

| Joint MOUT Doctrine Specific Needs:<br>Command and Control (1 of 2)   |           |          |
|---|-----------|----------|
|    |           |          |
| Requirement   | Relevance |          |
|   | Opnl      | Tactical |
| • Analysis of contingency types and responses, e.g., observation that "You don't have to be in the city to control the city" versus surrendering control of urban interiors to enemy/crime elements | X         |          |
| • Air-ground and ground-ground engagement IFF, Identification enemy-noncombatant  |           | X        |
| • Force allocation within area of operations (e.g., Stalingrad, Breko)  | X         |          |
| RAND AIRCRAFT CENTER RAND   |           |          |

COL Greg Fontenot, commander of the 1st Armored Division's 1st Brigade during the initial entry of U.S. forces into Bosnia in 1995, made his presence felt in Brcko through the controlled use of patrols, overflights, and other demonstrations of force. He felt it unnecessary to maintain a large and continuous presence in a city that was, and remains, a key (perhaps decisive) point in maintaining peace in Bosnia-Herzegovina. Subsequent events have proved his judgment correct. In Grozny, on the other hand, the Russian failure to maintain any sort of constant presence within that Chechen city was perceived as a sign of weakness by the rebel forces. When is occupation necessary? When is it counterproductive? Doctrine may not be able to address every possible contingency. It can, however, provide guidance of value in addressing many of an operation's challenges and stand as the basis for informed decisionmaking.

Friendly and noncombatant casualties have proved to be critical factors that directly influence mission success. National Command Authorities (NCA) decisions after the 1982 Marine barracks bombing in Beirut and the withdrawal of U.S. forces from Mogadishu after the

loss of 18 American soldiers in October 1993 demonstrate that accomplishment of a military mission may in and of itself be insufficient. Identification, friend or foe and distinguishing between friendly, enemy, and noncombatants during combat are complicated in an urban environment, especially under conditions of limited visibility. Effective doctrinal procedures are essential both in the short term and as guides for future technological development.

Allocation of resources during planning and execution of campaigns involving significant urban areas has historically proved difficult. Marshal of the Soviet Union Zhukov and Erich von Manstein, commander of the German Don Front, both struggled with decisions involving the appropriate amount of support to lend to units fighting within Stalingrad versus those dedicated to operations outside the city.

| Joint MOUT Doctrine Specific Needs:<br>Command and Control (2 of 2)   |           |          |
|---|-----------|----------|
| Requirement   | Relevance |          |
|   | Opnl      | Tactical |
| • Need for decentralization, historical failure of micromanagement, effects on junior leader training       |           | X        |
| • Linkage of operational-level denial operations to urban defense and expulsion of enemy forces from cities | X         |          |
| • Urban campaign planning: Who writes the plan? What is the role of the military?                           | X         |          |
| • Communications limitations and failure of LOS-dependent systems   |           | X        |
| • Rules of engagement   | X         | X        |
| MDRI/ ARROYO CENTER   |           | RAND     |

MOUT has historically proved to be a predominantly small unit action. Leaders at division, brigade, and battalion level have attempted to control actions of units only to find that their knowledge of the situation has been overtaken by events. Junior leaders must be trained to take actions generally left to more senior individuals or branch and service specialists. Calls for fire, direction of incoming aviation and air fires, control of supporting elements, management of non-combatants, and other responsibilities must be identified so that joint and service training can prepare leaders for these eventualities during operations. The previously mentioned influences that cause rapid mission changes demand timely adjustments. Frequent revision of plans is likely to characterize a unit's MOUT experiences. Designing flexibility into those plans eases the impact of such unavoidable alterations. For example, history has shown that leaders at the lowest tactical levels must be prepared to transition quickly from defense to counterattack and back so as to deny the initiative to an aggressive enemy.



As mentioned in the discussion of a previous slide, operations outside a built-up area can significantly, even decisively, influence actions within an urban conglomeration. For example, the identification of high-payoff targets and the allocation of assets to interdiction vice urban-internal activities will be significant factors during future fights; they are currently not addressed in service or joint doctrine.

While during war it is obvious which headquarters is responsible for writing a campaign plan, the same is not always true during operations dominated by stability and support missions. The 1998 situation in Bosnia is an excellent case in point. There the military is but one influence in maintaining the peace and restoring normalcy to the nation, yet no entity, military or otherwise, seems to have the degree of authority essential to the writing of a coherent campaign plan. The SFOR's (stabilization force) control over other-than-military factors is limited, yet economic, political, and diplomatic elements are critical to both short-term and long-term success. Joint doctrine should help to identify the extent to which military operations can influence given situations; it should also explore appropriate actions in cases where military capabilities have only limited control over the ultimate success of an operation or campaign.

Urban fighting tends to be disorienting for many of those involved. Buildings and rubble often preclude an individual's seeing anyone beyond his immediate environs, a situation that sometimes leads to fears of abandonment. Effective PSYOPS can capitalize on these tendencies to the benefit of friendly force operations.

The same obstacles that interfere with soldier vision act to disrupt communications and global positioning systems (GPS). Maintenance of status and passing of even the most basic orders may become impossible as elements move into structures, enter subterranean passages, or move along parallel streets and alleys. The direction of fires and other calls for support are therefore more complicated than in most open environments. Technical procedures or techniques to deal with such expected disruptions should be known to all who may potentially be involved in urban operations.

Rules of engagement (ROE) are crucial to minimizing friendly and noncombatant casualties while also keeping infrastructure damage to an acceptable level. National objectives and tactical missions will

influence the types, caliber, and character of fire support; the ability to use PSYOPS; the application of lethal or nonlethal fires; and many other aspects of military operations. Guidance on the development of ROE is crucial to future missions.

| Joint MOUT Doctrine Specific Needs:<br>Information Operations  |           |          |
|--|-----------|----------|
| Requirement  | Relevance |          |
|  | Opnl      | Tactical |
| • Implications of more sophisticated/<br>cosmopolitan population on CA (expectations),<br>PSYOPS, and other operations | X         |          |
| • Deception in urban areas   |           | X        |
| • Density and nature of media demands  | X         | X        |
| • Means of gaining and maintaining influence<br>over enemy and noncombatants   | X         | X        |
| • Influence of urbanization on PSYOPS, CA  |           | X        |

What are deemed minimum standards of living are frequently different for members of an urban population and their rural counterparts. A country's rural residents may not have access to indoor plumbing, electricity, and other amenities that those in the cities take for granted. Economic strata, cultural backgrounds, and other factors may cause different expectations even within the bounds of a single city. Intelligence collection must identify these differences in order to provide an initial basis for developing PSYOPS and civil affairs plans as part of the information operations (IO) campaign. Such input allows planners to appropriately address population expectations, thereby increasing the probability of winning their support (or, at a minimum, their ambivalence) during ensuing operations. Such information helps friendly forces to better meet the needs of a population during combat contingencies, stability and support missions, postconflict rebuilding, or other actions of which relief activities are a component.

The nature of deception in urban areas differs significantly from that in other environments. This observation applies to the full spectrum

of military operations, not just to combat. Deception may play a significant role in protecting, supporting, or influencing noncombatants during stability and support missions.

The media tends to focus its attention on operations in urban locations. Because cities are transportation hubs, news representatives are likely to use them as bases. Shelter, electricity, food, potable water, and access to a high density of noncombatant, military, political, and other individuals of interest further tend to draw the presence of media to built-up areas. Controlling both news representatives and their information is complicated by the nature of city environments. As such, the military commander must be prepared to handle media demands while also ensuring that the resultant pressures to focus on urban centers does not result in decisions counterproductive to operational objectives.


The media can affect military operations during stability and support missions as disruptively as they do in war. Soon after the cease-fire precipitated by the Dayton Accords, civilian relief operations were well under way in Bosnia-Herzegovina. The focus of the relief effort was in the process of changing from Sarajevo to other locations in more dire need. Pressures resulting from a news report by a prominent Western journalist decrying the continued suffering of the capital city's citizenry caused a second reorientation of effort. Whether the decision was made by political or military leaders, or both, areas in greater need had to wait even longer as Sarajevo once again gained the attentions of support capabilities due to the media focus.

The behaviors of noncombatants during urban operations can dramatically influence the ultimate outcome of friendly force activities. Too often, casualties among civilians far exceed those of combatants either because of an inability to move them out of a combat zone or because one side deliberately employs them as shields, laborers, hostages, or as a means of influencing the media. In other instances, noncombatant groups can be valuable sources of information and can help provide supervision of a population to the benefit of both civilians and those in the military. Identification of civilian needs, in-place authorities, willingness to assist friendly force operations, and sympathies/antipathies for adversaries' objectives can mean the difference between friendly force success and failure. Effective psy-

chological and civil affairs operations can significantly influence mission outcome.

Just as urban and rural dwellers may have differing expectations, the best ways to establish contact and influence members of these populations may differ. Television, radio, leaflets, billboards, loudspeakers, and other media may be more or less effective given the availability of electricity and appliances in specific areas. The level of social maturation will affect individuals' susceptibility to the nature of a communication and the means used to communicate it. Other factors potentially influencing the susceptibility of individuals to propaganda or other messages include the homogeneity of the local population, antipathies between members of native and displaced populations, factional differences, and relations with police and other authority figures.

**Joint MOUT Doctrine Specific Needs:  
Noncombatant Considerations (1 of 2)**



| Requirement   | Relevance |          |
|---|-----------|----------|
|   | Opnl      | Tactical |
| • Crowd "mass psychology" and riot control  |           | X        |
| • Adversary's deliberate use of willing ("rent-a-crowd") or unwitting (Hue) noncombatants                             |           | X        |
| • Appropriate application of lethal versus nonlethal force  | X         | X        |
| • Tactical- and operational-level planning considerations to minimize noncombatant loss of life and collateral damage | X         | X        |

RAND

The population density inherent in urban operations requires that greater attention be paid to the behavior and control of crowds. During stability and support missions, friendly forces may confront crowds driven by a variety of motives. Some are hired for specific purposes by factions or interest groups; others are inspired by a shared cause. Yet another group may consist of rioters acting only to serve their individual interests (e.g., looting). Those responsible for domestic and international urban operations would benefit from a doctrinal discussion of allocation of responsibilities and possible approaches to handling large groups in such contingencies.

Control of noncombatants, either in cohesive masses or as individuals, may require the use of force in some situations. The advantages and disadvantages inherent in employing various weapons should be presented in a joint doctrinal publication. Discussion should include an evaluation of nonlethal force effectiveness and its limitations. U.S. forces operating in Brcko during the August 1997 riots fired CS gas at those creating the disturbance, only to find the canisters

thrown back into their own lines with little effect on the intended targets other than to further embolden them.

Another effect of increased media influence on military operations has been a perceived lessening of the American public's tolerance for the loss of noncombatant lives. Here again, successful accomplishment of a military mission may not serve national or coalition objectives if the loss of life is such that the force is removed from a theater or continued operations are overly constrained. Doctrine should provide guidance on how to limit noncombatant access to combat areas or otherwise preclude unnecessary casualties.

### Joint MOUT Doctrine Specific Needs: Noncombatant Considerations (2 of 2)

| Requirement   | Relevance |          |
|---|-----------|----------|
|   | Opnl      | Tactical |
| • Faction control of populations in anarchic situations (e.g., "oil spot" theory, Trinquier's <i>Modern Warfare</i> ) | X         |          |
| • Post-conflict population and infrastructure management, e.g., displaced persons and unemployment                    | X         |          |
| • Noncombatant support requirements, including mass casualty events   | X         | X        |
| • Role of air and aviation as intimidators (linkage to use of lethal and nonlethal force)                             |           | X        |

Both in war and in other events, urban social conditions may approximate anarchy. Regaining control of population segments will be difficult and require well-considered applications of coercion, reinforcement, separation of disruptive elements, and other approaches. Sir Robert Thompson's theories on population control in Malaya and Vietnam may have application to environments beyond the predominantly rural areas in which he initially worked. Negative lessons should also be studied for their insights. Trinquier's methods as outlined in *Modern Warfare* are unlikely to find favor among Western societies, but their militaries could well find themselves confronting adversaries quite willing to apply such techniques.

Whether it follows war or another form of strife, the end of overt hostilities seldom coincides with a cessation of social ills within a built-up area. To the contrary, the threat of disease, a lack of shelter, shortages of food, water, and medical supplies, and other problems often become evident in full only after the threat of violent death or injury has subsided. Military forces, private aid, and international governing organizations need to be ready to make this transition



rapidly and smoothly if minimum loss of civilian life and maintenance of stability are to be ensured.

In addition to the increased volume of "normal" relief requirements such as food, water, and medicine, the massing of populations in cities poses the potential for large-scale disasters involving noncombatants. A commander must be aware of his force's capabilities to complement local medical facilities or single-handedly handle mass casualty events due to weapons effects or the use of WMD. Large-scale rioting, internecine conflict, and epidemics are further examples of events that could occur on a grand scale in urban areas occupied or within the area of operations for a military commander.

Built-up areas constrain the use of fire power in many instances. That does not preclude its unconventional application in the support of military mission accomplishment. For example, the nonstandard use of capabilities and a desire to apply nonlethal coercive force have resulted in innovative uses for aircraft in recent operations, notably those in the former nation of Yugoslavia. Both fixed-wing and rotary-wing aircraft overflights have been used in an intimidation role, an application that capitalizes on the threat, rather than actual use, of fire power.

### Joint MOUT Doctrine Specific Needs: Fire Power and Fire Support (1 of 2)

| Requirement  | Relevance |          |
|--|-----------|----------|
|  | Opnl      | Tactical |
| • Ground-air and air-ground target designation           |           | X        |
| • Determination of "danger close"                        |           | X        |
| • Engagement altitudes, attack positions, and approaches |           | X        |
| • Aircraft-mission selection criteria                    | X         | X        |
| • Air-ground coordination and control measures           |           | X        |
| • Naval gunfire support                                  |           | X        |
| • Responsibilities for air defense and suppression       | X         | X        |
| • Coordination and use of nonlethal systems              | X         | X        |

RAND

Proximity of structures, density of noncombatants, the short ranges between friendly forces and likely targets, availability of subterranean cover, the presence of high-voltage power lines and other obstacles: these are but a few examples of what can complicate the application of fire power in urban areas. Aviators supporting U.S. soldiers in Mogadishu during the night of October 3–4, 1993, found that the sheer number of laser traces confused their attempts to provide fire support. Pilots were reduced to such adaptations as asking their ground contacts to "make a figure eight with your laser" in efforts to distinguish them from the many others serving equally legitimate purposes. Engagements were made more difficult by the knowledge that spalling, debris, and flying glass tend to cause more friendly casualties during MOUT than enemy fire does. Munitions effects on various building materials were, and still are, poorly documented. In contrast, structures may shield friendly force members from nearby blasts; specifications of what is "danger close" in an open environment can seem ill-suited to fighting in the city.

Pilots may find their targets masked by intervening structures or other obstacles that interdict flight lines. Having separate aircraft handle target designation and engagement tasks is often impossible when a target is surrounded by buildings, friendly units, and/or locations possibly occupied by noncombatants. The appropriate selection of airframe may overcome some of these problems, but, as has been stated, there is currently little doctrinal guidance on which aircraft are better suited to the accomplishment of specific urban tasks.

The same line-of-sight problems that interfere with ground-to-ground communications can block air-to-ground or ground-to-air transmissions. Requests for aircraft-delivered support are further complicated by the difficulty of distinguishing one building or one city block from another. The consequences of such confusion were demonstrated during Operation Urgent Fury in 1983 Grenada, when an air engagement mistakenly hit a U.S. command post.

Many of the same urban characteristics influence artillery, mortar, and naval gunfire support. Fire support is often crucial to mission success and ground force survival. The presence of noncombatants and strict ROE tend to inhibit the provision of such support within built-up areas. Doctrinal guidance is essential to ensure that potentially effective applications of fires are not overlooked.

Small arms, anti-aircraft guns, and even rocket-propelled grenades have been used successfully against airframes over built-up areas. These means of engagement often lack the radar signature that allows sophisticated counterradar engagements to neutralize air defense systems. In cities, more of the counter air defense burden may fall to ground forces. Similarly, these forces may find that their survival against enemy air attack becomes more a function of self-preservation, compared to other environments better served by the target-engagement capabilities of current air defense systems.

Selection of the best alternative given an ammunition rack with several types of ammunition can help to overcome some of the problems associated with the proximity of friendly units and noncombatants to a legitimate target. As has been mentioned, such difficulties might be surmountable through the use of nonlethal munitions or less-than-lethal systems. However, failure to understand system

characteristics can seriously degrade efforts to accomplish the mission, as was the case in 1968 Hue when a force employed CS gas without first notifying an adjacent friendly unit whose members were not carrying protective masks.

| Joint MOUT Doctrine Specific Needs:<br>Fire Power and Fire Support (2 of 2)   |           |          |
|---|-----------|----------|
| Requirement   | Relevance |          |
|   | Opnl      | Tactical |
| <ul style="list-style-type: none"> <li>Weapons effects: all services; lethal and nonlethal systems               <ul style="list-style-type: none"> <li>Effects = f(CEP, bursting radius, penetration), value/precautions regarding 5.56 mm versus frangible munitions</li> <li>Selection of best system for given target types, including consideration of round trajectory after launch (e.g., Hellfire, TOW, Dragon, sabot debris)</li> </ul> </li> <li>Operational effects of gun lines, missile trajectories, LZ selection on ground operations</li> <li>Effects of strategic and operational strikes on tactical ground operations and post-combat restoration</li> </ul> | X         | X        |

Weapons have other effects that are of concern in an area with many noncombatants. In addition to having to account for circular error probable and bursting radii, planners must consider munitions penetration properties. Arms must be capable of penetrating masonry, several floors of a building, body armor, or other materials in order to meet mission profile requirements. That same penetrating capability means a round may travel well beyond a target, impacting on unintended structures and killing innocents or friendly forces. Determination of what rounds best suit specific needs remains an unfulfilled requirement.

The necessity for doctrine to provide guidance on the appropriate selection of combat systems in a given scenario has been identified. Similarly, specific weapon systems have trajectory characteristics that make them more or less suitable to given situations. Wire-guided missiles, for example, generally are not under operator control for considerable distances after they are launched, e.g., TOW missiles travel 500 meters before guidance is possible. In the intervening distance such munitions travel highly erratic paths that make

impacts likely if buildings or other obstacles are to the right or left of the line-of-sight between operator and target.

Selection of urban landing zones (LZs) is at times very difficult. Ground LZs may be exposed to numerous firing positions; rooftop LZs may be dominated by higher buildings, may demand an excessive number of landing iterations, or may be structurally incapable of handling given airframes.

Though the linkage of operational targets and strategic objectives is generally clear, at times target selection may have impacts on operations that are not fully recognized. The result of the Al Firdos bunker bombing was a modification of bombing policy for Baghdad and its environs. It has been argued that one reason the Gulf War was terminated after 100 hours was that the "Highway of Death" demonstrated coalition domination to the extent that the conflict had become a one-sided slaughter.

### Joint MOUT Doctrine Specific Needs: Logistics, WMD, Engineer Support

| Requirement  | Relevance |          |
|--|-----------|----------|
|  | Opnl      | Tactical |
| • Logistics  |           |          |
| – Casualty rates                                     | X         | X        |
| – Casualty evacuation (to include air crew recovery) |           | X        |
| – Infrastructure rehabilitation                      | X         | X        |
| • WMD  |           |          |
| – Weapons effects                                    | X         | X        |
| – Defensive measures                                 | X         | X        |
| – Decontamination considerations                     | X         | X        |
| • Engineer Support                                   |           |          |
| – FASCAM effectiveness                               |           | X        |
| – Physical infrastructure requirements               | X         | X        |

Logistics, the effects of weapons of mass destruction (WMD) in urban areas, and demands on engineering expertise have all been neglected in service doctrine and MOUT-related literature. Urban battlefield casualty rates for both military forces and noncombatants are known to be high, yet there are no discussions of the challenges of evacuation, mass casualty issues, or the need for more medical personnel in such environments in joint doctrinal literature. Similarly, consideration of infrastructure recovery matters, including determination of the needed skills in engineering and city planning/management, is virtually nonexistent in manuals available to high-level planners.

WMD threaten both domestic and international urban areas. Detection of nuclear, biological, radiological, and chemical events may be straightforward; it is also possible that occurrences may be very difficult to identify as WMD-related. The need to prepare for WMD events and increase detection awareness is not solely a military responsibility, but it is highly likely that the military will be called on soon after any such use is suspected. There is much work to be undertaken in this area; the foundation for doctrinal guidance is

therefore poorly established. Nonetheless, the requirement for guidance should be met to the extent possible pending further investigation of relevant issues.

Planners must be cognizant of what skills infrastructure restoration will demand both at the macro level highlighted above and at lower levels. Additionally, just as urban munitions effects should be discussed in doctrine, so too must guidance be provided that considers the alternatives available, lethal and nonlethal, for the construction of obstacles in built-up areas. Obstacles may have applications generally not considered during operations in other environments, e.g., access denial to keep noncombatants from inadvertently becoming involved in combat.



### Joint MOUT Doctrine Specific Needs: Training

| Requirement  | Relevance |          |
|--|-----------|----------|
|  | Opnl      | Tactical |
| • Demographic and cultural characteristics' impact on operations   | X         | X        |
| • Joint TTP  |           | X        |
| • Use of urban areas and military installations in support of training   |           | X        |
| • Joint training at military MOUT sites  |           | X        |
| • Requirements for and use of live fire facilities   |           | X        |
| • Uniform training guidance and standards; 2/98 MOUT conference concluded key to short-term readiness is better doctrine and training, not technological fixes | X         | X        |

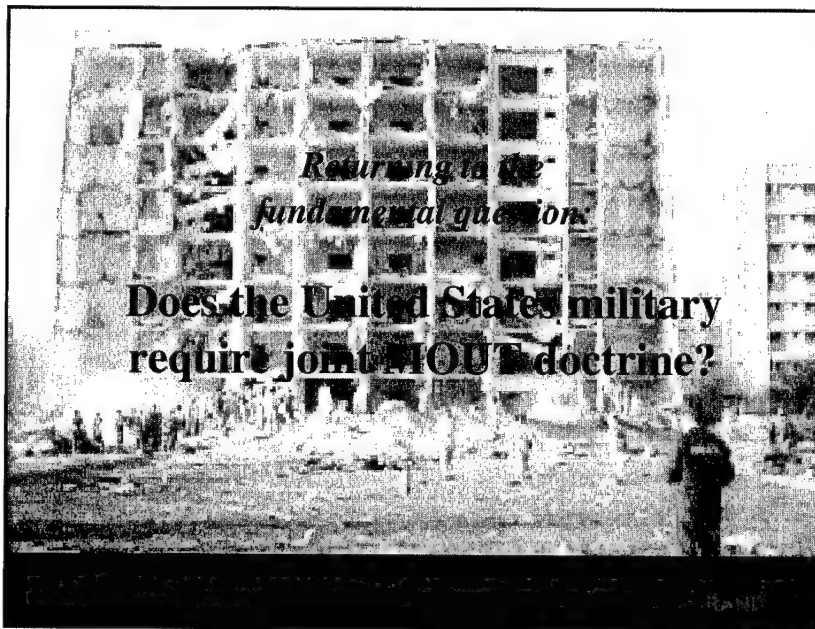
Training looks to doctrine for standards and focus. Areas of lesser importance during other mission types may be of considerable significance during MOUT. One such case is the relative importance of planners and executors knowing the nuances of cultural and other demographic differences between various groups within urban areas. Attitudes toward social hierarchies, the woman's role in public life, the meaning of certain gestures: these are a cursory sample of the kinds of considerations a force should include in its preparations for operations in densely populated locations.

Joint MOUT doctrine would help in maintaining consistency as one U.S. force replaces another. For example, a JP could emphasize the need to coordinate with coalition units, PVOs, NGOs, and other organizations in an effort to provide consistent policies for dealing with local noncombatants. Somalia provides a demonstrative case study. With various nations periodically assuming responsibility for given geographical areas, the means employed to obtain information differed over time. A European army organization routinely paid for information from local nationals. This practice was curtailed when

another unit from a less wealthy nation assumed responsibility for the area. The result was antipathy between locals who had become accustomed to monetary reward for their services and the new coalition representatives. Consistency also offers benefits during U.S.-internal operations. Joint tactics, techniques, and procedures not only act to ensure that a CINC will have U.S. units trained to similar standards; they are also a vehicle to help commanders understand the broader demands of their operational environment.

At present there are no training facilities capable of providing a forum for MOUT training at the battalion level or higher. Existing facilities generally do not allow for realistic training at levels above squad or platoon. Few MOUT sites are automated to allow feedback as the National Training Center does. Cost will likely rule out any construction of sites meeting the many needs of large-scale urban operations training. An alternative is to use actual urban areas or military installations as training sites. How training in such environments can be conducted is another area in which doctrine can provide guidance. Use of these and extant MOUT sites for joint training offers CINCs an opportunity to bring diverse elements together in this difficult environment instead of delaying the first meeting until the operation.

A recommendation from the field was that weapons training for tankers and mechanized infantrymen include a MOUT qualification table. Both the Air Force and Marines have created, or are in the process of building, replicas of built-up areas for use during aircraft live-fire validation trials. These or like facilities would serve well as training sites during aviator preparation for the challenges of operating in urban areas.



Given the summary of analysis provided thus far, it is appropriate to return to the fundamental question that triggered the initial investigation.

## Does the U.S. Military Require Joint MOUT Doctrine?

- History, U.S. military superiority, worldwide demographics, and those on active operations point to a requirement for creation of joint doctrine. At a minimum, doctrine is essential to provide a "tool box" for operators and trainers, i.e., a source to which they can turn when preparing for and conducting joint MOUT.
- Formal doctrine is essential; less formal guidance lacks:
  - sufficiency of authority
  - the legitimacy to serve as the basis for training and operational preparation
- Both tactical- and operational-level joint MOUT doctrine are needed; one publication will suffice for both

NDRI/ARND CENTER

RAND

The answer to the fundamental question of whether the U.S. military requires joint doctrine is an unqualified "yes." History, ongoing operations, and calls from those in the field all support the creation of a comprehensive joint doctrine. Inserting this doctrine throughout the multitude of extant joint publications would cause an 8–12 year lag in promulgation<sup>1</sup> and also unnecessarily complicate users' access to such valuable guidance. Commanders and planners need a single source when preparing for MOUT, one that has all the "tools" readily identified, if planning and execution are to approach optimal effectiveness.

The recent decision to develop a separate joint MOUT publication was an essential step in readying our nation's armed forces for future contingencies. While less formal publications (e.g., a handbook or pamphlet) can be valuable in filling the gap between the discovery of valuable lessons learned and their inclusion in formal doctrine, such

<sup>1</sup>Manuals are not regularly updated, and rewriting a manual can itself take several years.

items lack the authority of doctrine and therefore offer no assurance that U.S. units deployed worldwide would approach urban operations in a similar manner or train to like standards. The potential costs when these units joined forces in an operational environment are obvious.

The specific needs identified by the field make it obvious that joint doctrine must cover a myriad of topics that include both the tactical and operational levels of war. To attempt a delineation between these needs and separate them into discrete documents is both unnecessary and counterproductive. The line between the tactical and operational levels is seldom a sharply defined one; understanding requirements for each may in fact be enhanced by the juxtaposition of complementary doctrinal discussions. One manual, well conceived and written, can effectively provide the U.S. armed services with MOU guidance for both levels without inappropriately impinging on individual service doctrines.

### **Possible Components of a Joint MOUT Pub**

- Theory and character of joint urban operations, including the political dimensions of MOUT
- Intelligence
- Command and control
- Information operations
- Fire power and fire support, including weapons effects and guidance for engagement systems selection
- Noncombatant considerations
- Weapons of mass destruction in built-up areas
- Logistics
- Training requirements

JOINT/ARMED CENTER

RAND

Though hardly comprehensive, the above are points worthy of consideration for inclusion in a MOUT joint publication. Such a manual should cover both tactical and operational guidance in a single volume and also address the complete spectrum of military urban operations. The result would be a vital reference for planners and operators at all levels, one that would also establish an effective foundation for supporting joint and service doctrine efforts.

**Clausewitz wrote that war (conflict) is “a kind of commerce on a larger scale.”**

**For MOUT, then:**

- the cost of operations in friendly force and noncombatant lives, consumption of resources, collateral damage, and risk is extremely high.
- near-term proficiency is potentially obtainable through training; technological solutions are complementary only.
- as doctrine drives training, joint MOUT doctrine offers a harvest of lives saved and homes spared.

In conclusion, the costs and risks inherent in MOUT are a matter of historical record and repeated revalidations. The long term offers hope for innovative approaches to these difficult undertakings that will reduce the dangers to both friendly forces and noncombatants. Then, as now, success will require well-considered, comprehensive urban operations doctrine.

---

## REFERENCES

---

### Books

- Beevor, Antony. *Stalingrad: The Fateful Siege: 1942–1943*. New York: Viking, 1998.
- Connaughton, Richard, John Pimlott, and Duncan Anderson. *The Battle for Manila: The Most Devastating Untold Story of World War II*. Novato, CA: Presidio, 1995.
- Delk, James D. *Fires & Furies: The LA Riots*. Palm Springs, CA: Etc. Publications, 1995.
- Freidin, Seymour, and William Richardson (eds.). *The Fatal Decisions*. New York: William Sloane, 1956.
- Hammel, Eric. *Fire in the Streets: The Battle for Hue, Tet 1968*. New York: Dell, 1991.
- Holbrooke, Richard. *To End a War*. New York: Random House, 1998.
- Jukes, Geoffrey. *Hitler's Stalingrad Decisions*. Berkeley: University of California Press, 1985.
- von Manstein, Erich. *Lost Victories*. Novato, CA: Presidio, 1986.
- MacKenzie, Lewis. *Peacekeeper: The Road to Sarajevo*. Toronto: HarperCollins, 1994.



Rotundo, Louis C. *Battle for Stalingrad: The 1943 Soviet General Staff Study*. Washington, D.C.: Pergamon-Brassey's, 1989

Shtemenko, S. M. *The Soviet General Staff at War, 1941–1945, Book One*. Trans. Robert Daglish. Moscow: Progress, 1985.

Zhukov, Georgi K. *Marshal Zhukov's Greatest Battles*. New York: Harper & Row, 1969.

———. *Reminiscences and Reflections, Volume 2*. Moscow: Progress, 1985.

### Articles

Bowden, Mark. "Blackhawk Down." *The [Philadelphia] Inquirer*. Series of articles, November 16 through December 14, 1997.

Clark, Paul C., Jr., and Edward H. Moseley. "Veracruz, 1847—A Grand Design." *Joint Forces Quarterly*, Winter 1995–96, pp. 103–115.

Grange, David L. and John S. Rovegno. "Shaping the Environment." Draft article, n.d.

Thomas, Timothy L. "The Caucasus Conflict and Russian Security: The Russian Armed Forces Confront Chechnya III. The Battle for Grozny, 1–16 January 1995." *Journal of Slavic Military Studies*, Vol. 10 (March 1997), pp. 50–108.

### Reports, Manuals, and Miscellaneous Other Materials

Close, MG George F., Memorandum, Subject: "22nd Joint Doctrine Working Party (JDWP) Minutes," with attachment, n.d.

*The Dayton Peace Accords: General Framework Agreement for Peace in Bosnia and Herzegovina, Annex 1-A*, December 14, 1995. As released on the U.S. Department of State Foreign Affairs Network on the World Wide Web site <http://dosfan.lib.uic.edu> by the Office of Public Communication, Bureau of Public Affairs, U.S. Department of State.

Dormeyer, Michael J. *Adequacy of Doctrine for Armor in MOUT*. Master's thesis, Fort Leavenworth, KS: Command and General Staff College, 1983.

Glenn, Russell W. *Combat in Hell: A Consideration of Constrained Urban Warfare*. Santa Monica, CA: RAND, MR-780-A/DARPA, 1996.

Lapham, Curtis A. *Colossus on Main Street: Tactical Considerations of Heavy Armor and Future MOUT Doctrine*. Fort Leavenworth, KS: School of Advanced Military Studies, 1996.

U.S. Department of Defense. FM 90-10, *Military Operations on Urbanized Terrain*. Department of the Army, 1979.

———. FM 90-10-1, *An Infantryman's Guide to Combat in Built-up Areas*. Department of the Army, 1993, with Change 1, 1995.

———. Marine Corps Warfighting Publication (MCWP) 3-35.3 (Advance Copy), *Military Operations on Urbanized Terrain (MOUT)*. Department of the Navy, April 15, 1998.

## Interviews

Browder, Michael, United States Army Joint Readiness Center. Interview at Fort Polk, Louisiana, September 17, 1997.

Charles, CPT John P., Commander, C Company, 501st MI Battalion. Interview at Camp McGovern, Bosnia, August 27, 1998.

Embry, LTC James H., Strategic Planner, IAD and Multinational Division North. Interview at Camp Eagle Base, Bosnia, August 28, 1998.

Fontenot, COL Greg, Commander, 1st Brigade, 1st Armored Division in Bosnia-Herzegovina from December 1995 to November 1996. Interview at Fort Leavenworth, KS, August 11, 1998.

French, Gary, GS-13 Collection Manager, USAREUR. Interview at Camp McGovern, Bosnia, August 27, 1998.

French, SFC Serge, B Company, 1st Battalion, 10th Special Forces Group. Interview at Camp Eagle Base, Bosnia, August 28, 1998.

Greco, LTC Thomas, G2, 1AD. Interview at Camp Eagle Base, Bosnia, August 26, 1998.

Hill, MAJ David E., B Company, 1st Battalion, 10th Special Forces Group. Interview at Camp Eagle Base, Bosnia, August 28, 1998.

Koski, CW2 Glenn L., B Company, 1st Battalion, 10th Special Forces Group. Interview at Camp Eagle Base, Bosnia, August 28, 1998.

Lau, MAJ Jeff, Deputy G3, 1ID; 1ID G3 Plans Officer (October 1996 to January 1997) and XO, TF 1-77 Armor (June 1997 to October 1997) in Bosnia-Herzegovina. Interview at Wurzburg, Germany, August 31, 1998.

Lyons, Commander Clinton G., USN, Office Chief, Military Operations Support Division, National Security Agency. Interview during travel en route from Camp Eagle Base to Sarajevo, August 29, 1998.

Martinez, LTC Michael R., Commander, 2-6 Infantry Battalion (TF Gator). Interview at Camp Bedrock, Bosnia, August 27, 1998.

Matthews, MAJ Richard E., 1ID G2 Planner, October 1996 to October 1997; G2 Plans Officer and Deputy G2 in Bosnia for 1ID, October 1996 to October 1997. Interview at Wurzburg, Germany, August 31, 1998.

Maxwell, LTC David S., United States Forces Korea and Combined Field Command J5 planner. Interviews conducted May 19-22, 1998, in Seoul, Republic of Korea.

Miklos, MAJ Michael, 1CAV Strategic Planner, HHC, 1AD. Interview at Camp Eagle Base, Bosnia, August 28, 1998.

Miller, CPT Eric N., B Company, 1st Battalion, 10th Special Forces Group. Interview at Camp Eagle Base, Bosnia, August 28, 1998.

O'Bryan, SFC Tom, B Company, 1st Battalion, 10th Special Forces Group. Interview at JCO House, Brcko, Bosnia, August 28, 1998.

Raschke, CPT Mark D., HHC Commander, TF 2-6 Infantry (TF Gator). Interview at Camp Bedrock, Bosnia, August 27, 1998.

Schmitt, CPT Paul J., B Company, 1st Battalion, 10th Special Forces Group. Interview at JCO House, Brcko, Bosnia, August 28, 1998.

Sobrato, MAJ Richard L., Operations Officer, 1st Battalion, 35th Armor Regiment. Interview at Camp McGovern, Bosnia (just south of Brcko), August 27, 1998.

Tamminen, MAJ (Finnish Army) Pasi, SO/G3 Plans, NORDIC Polish Brigade, HQ, Dobo, Bosnia-Herzegovina. Interview August 27, 1998.

Taylor, SSG Kyle, B Company, 1st Battalion, 10th Special Forces Group. Interview at Camp Eagle Base, Bosnia, August 28, 1998.

Usry, MAJ Floyd, USMC. Telephone interview, June 4, 1998.

Warner, COL Volney, Commander, 2nd Brigade, 1AD. Interview en route from Camp Eagle Base to Camp Bedrock, August 27, 1998.

White, Billy, 422 TES/DOA. Interview conducted at Nellis AFB, NV, March 18, 1998.

Wright, MAJ Brooks, USAF, 422 TES/DOA. Interview conducted at Nellis AFB, NV, March 18, 1998.